

IN THE SPECIFICATION

Please replace the paragraph beginning at page 1, line 21, through page 2, line 4, with the following rewritten paragraph:

Thus, air is taken in by the operation of the fan, and the air is compressed by the operation of the compressor. When the fuel is burned in the compressed air by the combustor, the combustion gas from the combustor is expanded to operate the turbine, and consequently the fan and the compressor are operated by the turbine. Since this series of operations (operation of the fan, operation of the compressor, combustion by the combustor and operation of the turbine) is continuously carried out, the jet engine can appropriately be operated, and a ~~rotation~~ rotational force can be obtained from the turbine and propulsion can be obtained by the combustion gas injected from the turbine.

Please replace the paragraph beginning at page 2, line 23, through page 3, line 5, with the following rewritten paragraph:

In case the jet engine is allowed to operate in a high output state, however, the ~~rotation~~ rotational speed of the turbine disc is increased and a large amount of combustion gas is entrained toward a center of the disc from the rim of the turbine disc. Thus, the flow rate of the cooling air which flows into the cooling passage is increased and it is necessary to sufficiently cool the turbine disc. On the ~~other~~ one hand, the turbine disc is sufficiently cooled, however, the consumed flow rate of the cooling air is increased to generate energy loss, and the energy efficiency of the jet engine is deteriorated.

Please replace the paragraph at page 4, lines 4-13, with the following rewritten paragraph:

According to the first aspect of the present invention, the compressor is operated to compress the air. When fuel is allowed to burn in the compressed air, combustion gas from the combustor expands to operate the turbine, and the turbine operates the compressor in association. By continuously carrying out the series of operations (operation of the compressor, combustion by the combustor, and operation of the turbine), the gas turbine engine can appropriately be operated, the ~~rotation~~ rotational force can be obtained from the turbine and propulsion can be obtained by the combustion gas injected from the turbine.

Please replace the paragraph at page 5, lines 2-8, with the following rewritten paragraph:

A second aspect of the present invention provides the gas turbine engine according to the first aspect, wherein the opposing surface of the cooling plate is substantially ~~in~~ parallel to the side surface of the rim.

According to the second aspect of the present invention, since the opposing surface of the cooling plate is substantially ~~in~~ parallel to the side surface of the rim, the circulating cooling air flow layer having a higher cooling effect can be formed in the cooling passage.

Please replace the paragraph at page 6, lines 7-15, with the following rewritten paragraph:

According to the third aspect of the present invention, the compressor is operated to compress the air. If fuel is allowed to burn in the compressed air, combustion gas from the combustor expands to operate the turbine, and the turbine operates the compressor in association therewith. By continuously carrying out the series of operations (operation of the

compressor, combustion by the combustor, and operation of the turbine), the gas turbine engine can appropriately be operated, the ~~rotation~~ rotational force can be obtained from the turbine and propulsion can be obtained by the combustion gas injected from the turbine.

Please replace the paragraph at page 8, lines 15-20, with the following rewritten paragraph:

Fig. 5 is a ~~partial~~ partially enlarged view for explaining a comparison between sizes of various portions of the periphery of the rim of the front seal including the front cooling plate; and

Fig. 6 is a ~~partial~~ partially enlarged view for explaining a comparison between sizes of various portions of the periphery of the rim of the rear seal including the rear cooling plate.

Please replace the paragraph beginning at page 13, line 26, through page 14, line 15, with the following rewritten paragraph:

The stationary seal member 69 in the front labyrinth seal 65 is integrally formed with an annular front cooling plate 85. The front cooling plate 85 extends in a radial direction of the turbine disc 55 such as to be opposed to a front surface of a rim of the front seal 61 (front surface of the rim of the turbine disc 55). The opposing surface of the front cooling plate 85 is close and substantially ~~in~~ parallel to the front surface of the rim of the front seal 61. A front cooling passage 87 is formed between the opposing surface of the front cooling plate 85 and the front surface of the rim of the front seal 61. A portion of the compressed air as cooling air can flow through the front cooling passage 87. The blade support member 49 is provided with a plurality of through holes 89 (only one of them is shown in the drawing) which are arranged in the circumferential direction. The front cooling passage 87 is in communication with an outer portion (one of cooling air sources) of the combustor liner 31 in

the combustor casing 29 through the through holes 89 and a fine gap of the front labyrinth seal 65.

Please replace the paragraph beginning at page 14, line 20, through page 15, line 5, with the following rewritten paragraph:

The stationary seal member 81 in the rear labyrinth seal 79 is integrally formed with an annular rear cooling plate 93. The rear cooling plate 93 extends in a radial direction of the turbine disc 55 such as to be opposed to a rear surface of a rim of the rear seal 63 (rear surface of the rim of the turbine disc 55). The opposing surface of the rear cooling plate 93 is close to and is substantially ~~in~~ parallel to the rear surface of the rim of the rear seal 63. A rear cooling passage 95 is formed between the opposing surface of the rear cooling plate 93 and the rear surface of the rim of the rear seal 63. A portion of the compressed air as cooling air can flow through the rear cooling passage 95. The rear cooling passage 95 is in communication with an appropriate cooling air source through a fine gap of the rear labyrinth seal 79 or the like.

Please replace the paragraph at page 17, lines 1-18, with the following rewritten paragraph:

By continuously carrying out this series of operations (rotation of the fan 11, operation of the low-pressure compressor 15, operation of the high-pressure compressor 21, combustion by the combustor 27, operation of the high-pressure turbine 35, and operation of the low-pressure turbine 41), the jet engine 1 can appropriately be operated, the ~~rotation~~ rotational force can be obtained from the high-pressure turbine 35, and propulsion can be obtained by the combustion gas injected from the low-pressure turbine 41 in the main passage 7. During the operation of the jet engine 1, cold air is injected from the bypass passage 9, and

the combustion gas is enveloped by this cold air. Therefore, noise which may be caused by injection of the combustion gas can be suppressed, and the amount of fuel to be consumed can be reduced.

During the operation of the jet engine 1, the front labyrinth seals 65 and 67 prevent the combustion gas from passing through the front side of the turbine disc 55 and from flowing toward the center of the turbine disc 55, and the rear labyrinth seal 79 prevents the combustion gas from passing through the rear side of the turbine disc 55 and from flowing toward the center of the turbine disc 55.

Please replace the paragraph at page 19, lines 10-21, with the following rewritten paragraph:

Fig. 5 is an enlarged view of a peripheral portion of the rim of the front seal 61 including the front cooling plate 85 shown in Fig. 1. In Fig. 5, a symbol S represents a distance between the high-pressure turbine rotor 39 (especially the front seal 61) and the high-pressure turbine stator 37 in the axial direction of the jet engine 1. When two or more high-pressure turbine rotors 39 are provided, the distance S is regarded as an average value of the distances. ~~[[A]] symbol~~ Symbol Sc represents a distance between the high-pressure turbine rotor 39 and the front cooling plate 85 in the axial direction of the jet engine 1. When two or more high-pressure turbine rotors 39 are provided, the distance Sc is regarded as an average value of the distances. Here, a proportion of these two factors is set as follows:

Please replace the paragraph at page 19, lines 23-26, with the following rewritten paragraph:

In the drawing, Sc_2 represents a minimum distance between a tip end of the front flange 91 and a tip end of the front cooling plate 85 in the axial direction of the jet engine 1, and a proportion of the factors Sc_2 and S is set as follows:

Please replace the paragraph at page 20, lines 2-7, with the following rewritten paragraph:

In the drawing, Src represents a minimum distance between the tip end of the front flange 91 and the tip end of the front cooling plate 85 in the radial direction of the jet engine 1, and Ra represents a distance between a center axis AX of the jet engine 1 and a center position of a rim cavity in the radial direction of the jet engine 1. A
The proportion proportional relationship of these two factors is set as follows:

Please replace the paragraph at page 20, lines 9-12, with the following rewritten paragraph:

In the drawing, θ_{dv} represents an angle (absolute value) formed between the high-pressure turbine rotor 39 (especially the front seal 61) and the front cooling plate 85 in a meridian plane of the jet engine 1, and the angle is set as follows:

Please replace the paragraph beginning at page 20, line 14, through page 21, line 1, with the following rewritten paragraph:

Next, Fig. 6 is an enlarged view of a peripheral portion of the rim of the rear seal 63 including the rear cooling plate 93. In Fig. 6, Sc represents a distance between the high-pressure turbine rotor 39 (especially the rear seal 63) and the rear cooling plate 93 in

the axial direction of the jet engine 1. When two or more high-pressure turbine rotors 39 are provided, the distance Sc is regarded as an average value of the distances. ~~[[A]] symbol~~
Symbol Sc_2 represents a minimum distance between a tip end of the rear flange 97 and a tip end of the rear cooling plate 93 in the axial direction of the jet engine 1. ~~[[A]] symbol~~
Symbol Src represents a minimum distance between the tip end of the rear flange 97 and the tip end of the rear cooling plate 93 in the radial direction of the jet engine 1. ~~[[A]] symbol~~
Symbol θ_{dv} represents an angle (absolute value) formed between the high-pressure turbine rotor 39 (especially the rear seal 63) and the rear cooling plate 93 in the meridian plane of the jet engine 1.

Please replace the Abstract at page 26, lines 1-9, with the following rewritten

Abstract: